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ABSTRACT

Precision teaching is a useful tool for individualizing drills on a wide variety of foreign language skills. In 5 to 10 minutes per day, students can systematically practice specific skills in need of improvement. The technique has four major components: (1) a precise means of measuring performance continuously, (2) detailed records on behavior charts, (3) a formula for interpreting the charted data, and (4) guidelines for making instructional decisions based on those interpretations. Precision teaching charts record daily student performance gains, and provide visual motivation for students, information for instructional decisions, and understandable communication with students, teachers, and parents. The use of precision teaching builds fluency in the target language and has been shown through research to have positive effects on student achievement. Precision teaching is adaptable to many skills and levels specifically found in the foreign language classroom. The cost in time and expense of the technique is small compared to the potential benefits for students and teachers. (MSE)

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Success Guaranteed: Precision Teaching in the Foreign Language Classroom

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Students enter the classroom and pick up their precision teaching folder from a file near the door. Music is playing on the tape recorder. This typical Latin tune is recorded to signal each one minute interval with a beep. Students open their folders and begin a program of individualized drill in which they chart their own progress and mistakes. The teacher is free to monitor individual progress through the students' charts or by listening to individuals at their desks or through the language lab. Other students are paired to check each other's pronunciation. By five to ten minutes into the instructional hour, the individualized drill has been completed, learning progress has been recorded on individual charts and the folders refiled for tomorrow's learning opportunity.

Does this sound like your language class? Could you use a quick, efficient way to individualize drill and practice in your language? Do you have several different levels of ability in one class? Then, precision teaching could be a very useful tool for you to use in your foreign language or E.F.L. classroom.

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What is Precision Teaching?

Precision teaching is a set of procedures that guides teachers and learners in finding ways to arrange the instructional and classroom environment which affect the learner's performance rate.[1] Precision teaching has four major components: first, a precise means of measuring performance on a continuous basis; second, detailed records on behavior charts; third, a formula for interpreting charted data; and fourth, guidelines for making instructional decisions based on the interpretations of the data.[2] Each of these components is described below.

The first component of precision teaching is directed at the continuous measurement of performance. The initial step in this measurement is the identification or pinpointing of the behavior or movement cycle to be measured. A pinpoint movement cycle is an observable behavior which has an identifiable beginning and ending point. The movement cycle must also be repeatable.[3] An example of a movement cycle might be "see a word on a flash card in English - say word in French."

The second step of the component of continuous measurement is the basic measure of rate. Skinner[4] has suggested rate as a universal measure of behavior. Lindlsey[5] has applied this principle to the classroom. Rate is a count of pinpointed movement cyles over time. Rate then is the number of words correctly spoken in French from the sight of the flash cards.

The third step of continuous measurement of performance is the counting of the behaviors or movement cycles over a specific amount of time. Precision teaching is flexible as a measure with behavior counts being taken per day, per hour, per minute or other periods of time. Behavior counts are taken at least daily, which helps to counteract the problem of infrequent sampling of behaviors of more traditional assessment instruments.[6] Most classroom teachers use one minute timings. So, our example becomes the number of spoken words per minute from flash card prompts.

The second component of precision teaching is the detailed recording of performance on behavior charts. Lindsley[7] initiated the use of the standard six-cycle behavior chart to measure classroom

behaviors. This six-cycle logarithmic chart reflects not only amount of performance, but rate and direction of change in the performance. The information which can be obtained from performance data recorded on the standard behavior chart is current and precise.[8] Each day the number of words is recorded (errors may also be recorded). The dots on the chart readily show the progress a student is making - correcta increasing, errors decreasing. What a motivator!

The third component of precision teaching is the interpretation of the charted data. The data which are charted on the standard behavior chart is interpreted in terms of celeration or the direction or change in performance. A celeration statement reflecting the percent of change is calculated from data recorded daily over a two-week period. A prediction line based on a celeration statement can be determined and used to set challenging but realistic goals for individual students.[9] Prediction lines may also be drawn on the chart by a simple "look-see" method. Students can draw their own lines.

The fourth component of precision teaching is a set of guidelines for instructional decision-making based on interpretation of charted

data. The frequency of response and the degree of celeration or change can indicate the recommended modification in instruction. If the data reflect a low frequency of response and a low degree of celeration, the indication is that the activity is too difficult and a "slice back" to an easier task would be recommended. If the data reflects a high frequency of response and alow degree of celeration, the indication is that the activity is too easy and a "phase change" to a more difficult task would be recommended. The list of decision indicators goes on to include each possible combination of frequency and celeration with instructional recommendations for each. These decision-making guidelines help to plan appropriate instruction for each individual student.[10] Many decision rules are readily understandable to students. Often, students may recommend their own changes from charted information. Precision teaching can really include the student in his own instructional decision-making.

The precision teaching model of chart-based learning offers several advantages over traditional instructional/assessment strategies. Precision teaching regards errors as learning opportunities attempting

to remove the typically negative aspects of failure.[11] Precision teaching as an assessment technique is directly related on a daily basis to the instruction occurring for an individual student.[12] Precision teaching will indicate direct effects of instructional strategies which can be immediately modified if necessary.[13] Precision teaching charts can provide intrinsic motivation as students see concrete, immediate evidence of their own learning.[14] Finally, precision teaching data provide a standard means of communication which facilitates exchange of information regarding students and successful instructional strategies.[15]

Development of Precision Teaching

Most innovative educational programs evolve from a need as perceived by educators. The need from which precision teaching evolved can be stated as follows: "If we wish to maintain flexibility in matching curriculum to particular students, we need to pinpoint each student's instructional level and continuously measure his improvement."[16] To help fulfill this need, some educators have turned to developments in the classroom application of behavioral analysis.[17]

Ogden Lindsley, considered to be the father of precision teaching, has modified the techniques of behavior analysis specifically for the classroom setting. Lindsley contrasts precision teaching with behavior analysis stating that behavior analysis stresses change as a result of external rewards whereas precision teaching focuses on intrinsic and traditional classroom contingencies.[18]

In the development of precision teaching, Lindsley retains certain aspects of behavior analysis which are suitable for classroom application. First, behavioral indicators direct from the learner will be the most reliable estimate of what learning has occurred. Second, behaviors which can be counted may be measured in frequency, a universal measure. Third, continous daily measurement provides early warning of any learning problems which may occur to help in decision-making. Fourth, is the importance of looking at what actually occurred in terms of learning as opposed to what was hoped to have taken place. Finally, the learner is free to learn at his own pace not affected by the pace of other learners.[19]

From these ideas, Lindsley developed the precision teaching model of chart-based learning. Precision teaching helps to answer some very

practical classroom questions:

1. What specifically does the student know?
2. What specifically does the student not know?
3. Where to begin to teach students?
4. When to provide motivation?
5. How to keep track of a student's progress?
6. How to know when a student has mastered a skill?[20]

Why Precision Teaching?

Teachers are being asked to individualize their instruction to a greater degree every year. As you can see from the opening classroom scene, this can be a real challenge to the foreign language instructor. Precision teaching is a useful tool in the struggle to meet individual student needs.

The precision teacher strongly believes in each child's uniqueness and is committed to individualized instruction. The precision teacher views the value of instruction not only in the sense of "how-have-we-done" (pre-post tests), but also in "how-are-we-doing" (continuous measurement).

There is great potential in precision teaching for the foreign language teacher. Precision teaching is adaptable to all levels and skills. Precision teaching can be a real motivator for students as it reflects daily performance gains. Precision teaching is an excellent way to provide individual drill and practice on critical language skills. Precision teaching can help establish learning set and encourage on-task behavior and develop concentration.[21]

One of the advantages of precision teaching is its use as a communication tool. When surveyed, precision teachers rated communication with students and parents as important uses of precision teaching.[22] The visual display on the precision teaching chart is readily understandable to students and parents as well as other teachers. Another advantage is that precision teaching provides information and strategies for daily instructional decision-making. Precision teaching also helps build fluency - a major goal in most foreign language classrooms. Language teachers have long known that fluency helps insure retention over time. Perhaps the greatest advantage of precision teaching is the small time investment needed to derive all of the potential benefits.

After initial stages of teaching students to use precision teaching, five to ten minutes per day will establish a solid precision teaching program. A small price for so many benefits.

A Classroom Example

The precision teacher has noted the slow and labored reading of this second year German student. The teacher has the student read aloud in English for one minute. The student read 175 words with no errors. This became the student's aim - 175 words per minute reading aloud in German. The teacher selected a first year reader and identified a selection of 200 words. Each day for five days, the student read for one-minute from the same passage. The student's reading rate moved from 100 to 150 words per minute. The student then drew a prediction line to see when he would likely reach his aim of 175 words. The next week, the student reached his aim one day early. The teacher recommended two more days on the same selection at or above aim before moving on. The student finally attained 190 words per minute. The teacher then recommended a "phase change" to a more difficult selection.

The next reading selection was taken from the middle of a second

year German reader. The student's rate dropped to 90 words per minute. After three days, the student had only progressed to 95 words per minute. The teacher recommended a "slice back" to a less difficult selection. A new selection was identified and the student again progressed. After several appropriate selections, the student's oral reading rate improved to 170 words per minute on a new selection. The teacher and student felt this rate was acceptable and the student moved to a new skill. This whole sequence took about six weeks, no more than five minutes per day. The student improved his fluency and felt he had mastered a skill. The teacher met an individual student need without detracting from other students or other group instruction.

Mastery vs. Fluency

Many instructional programs recently have stressed mastery. The idea is that a student should not move on until he has demonstrated mastery on a given skill. Most mastery tests are untimed and allow for some error. Foreign language teachers know that in order to recall a skill later and have that skill readily available, mastery is not enough. The student must not only master the pronunciation and usage

of a vocabulary term. To be really useful, the student must be fluent. The term must be ready at a moment's notice - not after careful deliberate thought. Fluency has always been a key principle in the foreign language classroom.

The research on precision teaching supports fluency as the necessary level for skill retention. Most precision teaching research has been done in the areas of reading and math; however, the results are applicable to the foreign language classroom. Sixth grade students using precision teaching significantly improved their scores from pre- to post-test in reading.[23] Primary students in a precision teaching project scored significantly higher in reading and math than similar students who did not receive precision teaching.[24] In a follow-up, these same students were again compared three years later and scored significantly higher than the original control group on 79% of the variables measured.[25]

In another study, precision teaching was compared to traditional teaching methods with 328 high school students in paired courses. For twelve weeks, all classes used traditional methods and subject area

tests showed no significant difference between paired classes. The second twelve weeks, paired classes were randomly assigned to experimental-precision teaching groups or to control-traditional teaching groups. Results showed that the top two-thirds of the precision teaching groups scored significantly higher on subject area tests than the paired control groups. Five months after completion of the study, the top two-thirds of the precision teaching students scored significantly higher than the control group on subject area retention tests. This finding again suggests the possible longitudinal effects of the precision teaching model.[26]

The issue of retention is critical for the foreign language teacher. If students are to move through the language sequence from first to third or fourth year, they must retain a majority of the information and skills taught from one year to the next. Precision teaching can be one tool to help achieve this goal by building fluency.

Precision Teaching in the Foreign Languages

There are numerous opportunities to incorporate precision teaching into the foreign language classroom. The first step to begin precision

teaching is to select a "pinpoint" or skill which needs work and improvement. Pinpointing is defining specifically what you want to measure and developing a short drill for that area. Pinpoint drills can cover vocabulary, grammar, structures, verbs, culture facts, pronunciation, fluency, reading comprehension, and writing skills. These drills should contain about sixteen to twenty five specific facts for learning.

To be effective pinpoints should be individualized. If, for example, one student is having difficulties using the irregular preterite verbs, his pinpoint should concentrate on that skill. Another student weak in a certain grammar skill would be working in his area of weakness. The focus for pinpointing is as wide as the needs of the students and the creativity of the teacher.

There are several learning channels through which pinpointing can occur. A learning channel is an "input-output" mode. Different channels measure different skills. A "see to say" channel measures pronunciation; "see to write" improves writing skills, "see to think to say" measures comprehension. The easiest channel for many students is

the "see to say" channel. An example of a "see to say" pinpoint is a list of twenty new vocabulary words in the target language. In one minute, the student would attempt to read and pronounce correctly as many of the words as he could. When the student reached his individual goal, he would progress to another pinpoint.

The next progression in channels could be "see to write." On this channel, the student would see twenty vocabulary words and copy them, still using the target language. Yet another progression in channels would be "see to think to write." On this channel, the student would look at drawings depicting the twenty vocabulary words and would write the words in the foreign language.

Other channels include "think to write," "think to say," "hear to write," and "hear to do." An example of "think to write" would be to have the student think of all the parts of the body and write their name in the target language. "Think to say" might have the student say all the parts of the body in the target language. An example of the use of the "hear to write" channel would be a pinpoint using a one-minute dictation drill. Acting out a command would be an example

using the "hear to do" channel. Each pinpoint should include several learning channels.

One of the main areas for application of pinpointing is in vocabulary building. Whether it be a basic classified vocabulary for beginning students or an advanced technical vocabulary for native speakers, most students benefit from vocabulary building. Some typical vocabulary building pinpoints for beginning students include colors, clothing, food parts of the body, family, health, sports, verbs, telling time, shapes, parts of a house, parts of a car, transportation, buildings, occupations, articles in a classroom, animals and tools. An excellent source for pictures for these basic vocabulary groups is The Vocabulary Builder, Multilingual Duplicating Masters, by Dorothy Liebowitz, printed by National Textbook Co.[27]

Each vocabulary builder should have pinpoints using several channels. For example, if the skill you want to strengthen is telling time, the pinpoint drill would have twenty clock faces showing different times. One channel for that skill would be to see how many clocks the student could read and pronounce correctly in one minute

(see to say). Another channel for that skill might be to write the correct time beneath each picture (see to write). The latter pinpoint would check spelling of the telling time skill while the former would check pronunciation.

Verb pinpoints are a fast and painless way to accomplish verb drills. Regular, irregular verbs, commands and all verb tenses lend themselves easily to precision teaching pinpointing. Many drills from workbooks can easily be adapted for verb skill pinpoints. Again, different channels should be pinpointed on each specific skill which you want to measure or improve.

Improvement of knowledge about the culture of your particular foreign language or E.F.L. can be accomplished through several types of pinpoints. One type of pinpoint, reading words in context, teaches facts, improves pronunciation and increases fluency. An example of this pinpoint in culture would be to have the student read a historical account of an important event. The student would attempt to read as many words as possible in one minute. Students can be paired for this activity for the purpose of checking pronunciation. An aim of a certain

number of words per minute should be set. This aim might be determined by the oral reading speed of a native speaker or from the teacher's reading speed. After just a few days, the student will have learned all the facts in the story and greatly increased his reading speed.

Other types of pinpoints on culture could be "see to think to write" and "think to write" facts on a certain topic. An example of a "see to think to write" pinpoint would be similar to a twenty question completion test where the student would have to respond to written questions on a particular subject. An example of a "think to write" pinpoint in culture would be to list all the Spanish speaking countries and their capitals.

"Hear to write" is another channel that lends itself to the culture pinpoints. By giving the student a dictation concentrating on a certain area of culture, the student will be increasing listening comprehension and spelling skills while learning about the culture.

Teaching of grammar structures is another excellent area for pinpointing. Some specific grammar pinpoints might include direct and indirect object pronouns, demonstrative adjectives and pronouns,

comparison of adjectives, the use of prepositions, or idioms. Again, the pinpointing should meet the needs of the student and should measure his growth in learning. By using different channels in the pinpoints, the students are not only learning the grammar structure but also improving pronunciation, spelling, and listening skills.

For more advanced students, creative writing can be used as an effective pinpoint. Have the student write a paragraph allowing five minutes to complete the task. Count the number of words written and divide by five to arrive at a per minute rate. Next, an aim may be set for increasing the number of words written per minute. Another creative writing activity might be to show the students an object, photo, or painting and have them write words for one minute describing what they see, feel, smell, hear or taste in the target language.

A reading comprehension pinpoint could include a reading selection in which every tenth word has been deleted. The student would then have to say or write the missing word. The types of pinpoints are endless and can be as inventive as the teacher can be creative. Students might help formulate their own pinpoints in areas of interest.

Conclusion

Precision teaching is a useful tool for individualizing drill on a wide variety of foreign language skills. In five to ten minutes per day, students can systematically practice specific skills in need of improvement. Precision teaching charts record daily student performance gains, provide visual motivation for students, information for instructional decisions and understandable communication with students, teachers and parents. The use of precision teaching builds fluency in the target language and has been shown through research to have positive effects on student achievement. Precision teaching is adaptable to many skills and levels specifically found in the foreign language classroom. The cost in time and expense of precision teaching is so small compared to the potential benefits for students and teachers. Those who implement precision teaching will find the rewards well worth the effort.

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